



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

466 7590 05/09/2008

YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

EXAMINER

LOGIE, MICHAEL J

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/09/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/519,552

07/27/2005

Christophe Cachoncinlle

0512-1251

2850

TITLE OF INVENTION: DISCHARGE RADIATION SOURCE, IN PARTICULAR UV RADIATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	08/11/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

466 7590 05/09/2008

YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,552	07/27/2005	Christophe Cachoncinlle	0512-1251	2850

TITLE OF INVENTION: DISCHARGE RADIATION SOURCE, IN PARTICULAR UV RADIATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	08/11/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
LOGIE, MICHAEL J	2881	250-50400R

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,552	07/27/2005	Christophe Cachoncinlle	0512-1251	2850

466 7590 05/09/2008
YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

EXAMINER

LOGIE, MICHAEL J

ART UNIT	PAPER NUMBER
----------	--------------

2881

DATE MAILED: 05/09/2008

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 215 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 215 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/519,552

Examiner

MICHAEL J. LOGIE

Applicant(s)

CACHONCINLLE ET AL.

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04 February 2008.
2. ☒ The allowed claim(s) is/are 20-26 and 30-40.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Jack I. Berman/
Primary Examiner, Art Unit 2881

DETAILED ACTION

Response to Arguments

Applicant's arguments, see "Remarks" pages 11-13, filed 04 February 2008, with respect to claims 20-40 have been fully considered and are persuasive. The "rejection" of 02 August 2007 has been withdrawn.

Response to Amendment

An "Amendment" was received on 04 February 2008, in response to Office Action of 02 August 2007. Claims 1-19 and 27-29 are canceled. Claims 20-26 and 30-38 are amended. Claims 39 and 40 are newly added.

Allowable Subject Matter

Claims 20-26 and 30-40 are allowed.

The radiation source configuration was not found in a prior art search. The search failed to show or suggest the prior use of:

- the gas supply line being wound helically against and spaced from the electrically insulating configuration with the limitations of claim 20.
- the cathode comprises an annular portion which is connected to a central portion which is connected to the discharge space, and the charge storage capacitors are distributed around the central portion and are connected, by means of the first terminal thereof, to the annular portion and, by means of the second terminal thereof, to a conductor ring which is

electrically connected to the first terminal of the at least one commutation capacitor in configuration with the limitations of claim 34.

- a gas supply line wound helically around the gas inlet pipe in one plane that is generally perpendicular to an axis of the gas inlet pipe, the gas supply line having a radially interior portion connected to the gas inlet pipe and a radially exterior portion that is connected to a fixed potential, so that production of electrical discharges inside the gas inlet pipe is inhibited in configuration with the limitations of claim 40.

The following is an examiner's statement of reasons for allowance:

In regards to claim 1, prior art fails to disclose a radiation source comprising: an anode (2) ; a cathode (3, 8); a discharge space (4) for electrical discharge between the anode (2) and the cathode (3); a gas inlet pipe (30) for introducing gas into the discharge space (4), the gas inlet pipe (30) being electrically connected to one of the anode (2) and the cathode (3, 8); an electrically insulating assembly (34) for the source; means (13 to 23) for producing, in the gas provided in the discharge space (4), an electrical discharge which brings about emission of electromagnetic radiation towards outside the discharge space; and a gas supply line (43) that has a first portion (44) connected to a fixed potential and a second portion (42) connected to the gas inlet pipe (30) and that comprises, between the first portion and the second portion, an electrically conductive material, the gas supply line (43) being wound helically against and spaced from the electrically insulating assembly (34), so that production of electrical discharges inside the gas inlet pipe (30) is inhibited.

Claims 21-26, 30-33 and 35-39 are allowed by virtue of their dependencies on the independent claim 20.

In regards to claim 34, prior art fails to disclose a radiation source comprising: an anode (2); a cathode (3, 8); a discharge space (4) for electrical discharge between the anode (2) and the cathode (3); a gas inlet pipe (30) for introducing gas into the discharge space (4), the gas inlet pipe (30) being electrically connected to one of the anode (2) and the cathode (3, 8); means (13 to 23) for producing, in the gas provided in the discharge space (4), an electrical discharge which brings about emission of radiation towards outside the discharge space; and a gas supply line (43) having a first portion (42) connected to the gas inlet pipe (30) and a second portion (44) that is connected to a fixed potential, the gas supply line (43) forming, between the first portion (42) and the second portion (44), an electrical impedance so that production of electrical discharges inside the gas inlet pipe (30) is inhibited, wherein the means (13 to 23) for producing discharge in the discharge space (4) comprise at least one charge storage capacitor (14) which is electrically connected, by means of a first terminal (15), to the cathode (3, 8) and, by means of a second terminal (16), to a first commutation capacitor terminal (18) of at least one commutation capacitor (19) which is electrically connected to the anode (2) by means of a second commutation capacitor terminal (20) thereof, electrical commutation means being provided between the first and second commutation capacitor terminals (18, 20) of the at least one commutation capacitor (19) and a source of charge voltage being provided between the first and second commutation capacitor terminals (18, 20) of the at least one commutation capacitor (19), and wherein a plurality of charge storage capacitors (14) are provided, the cathode

Art Unit: 2881

(3, 8) comprises an annular portion (8) which is connected to a central portion (6) which is connected to the discharge space (4), and the charge storage capacitors (14) are distributed around the central portion (6) and are connected, by means of the first terminal (15) thereof, to the annular portion (8) and, by means of the second terminal (16) thereof, to a conductor ring (13) which is electrically connected to the first commutation capacitor terminal (18) of the at least one commutation capacitor (19).

In regards to claim 40, prior art fails to disclose a radiation source comprising: an anode (2); a cathode (3, 8); a discharge space (4) for electrical discharge between the anode (2) and the cathode (3); a gas inlet pipe (30) for introducing gas into the discharge space (4), the gas inlet pipe (30) being electrically connected to one of the anode (2) and the cathode (3, 8); means (13 to 23) for producing, in the gas provided in the discharge space (4), an electrical discharge which brings about emission of radiation towards outside the discharge space; and a gas supply line (43) wound helically around the gas inlet pipe (30) in one plane that is generally perpendicular to an axis of the gas inlet pipe, the gas supply line having a radially interior portion (42) connected to the gas inlet pipe (30) and a radially exterior portion (44) that is connected to a fixed potential, so that production of electrical discharges inside the gas inlet pipe (30) is inhibited.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Logie whose telephone number is 571-270-1616. The examiner can normally be reached on 7:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 2881

/Jack I. Berman/
Primary Examiner, Art Unit 2881